

**Rhode Island Department of Environmental Management
Office of Waste Management**

Closure Policy for Inactive or Abandoned Solid Waste Landfills

March 2001

1.0 Applicability

This policy is applicable to all inactive or abandoned solid waste landfills¹ that ceased operation (stopped accepting waste) prior to April 1992, and which have not received a final Certificate of Closure from the Department of Environmental Management (Department or DEM) or the Department of Health (DOH).

2.0 Background

More than 100 landfills have been identified within Rhode Island and approximately 30 of these sites are already being evaluated through the Waste Facility Management Program, the State Site Remediation Program, the NPL/Department of Defense (Superfund/DOD) Program, and Superfund Site Assessment (CERCLA) Program. The majority of the remaining sites are abandoned municipal and private landfills, some of which were never licensed for solid waste disposal. Department records indicate that approximately forty of these landfills received oversight from the Department's Solid Waste Program during the operation and/or closure of the landfill, but many did not complete the required closure procedures. Because the operating standards, closure and post-closure procedures that were required of these landfills were only minimally protective of human health and the environment, even those sites which did complete the minimal closure requirements (yet did not receive a Certificate of Closure) may still pose a potential or actual threat to human health and the environment.

To evaluate the potential threats posed by these sites, all of the landfills that were known to the Department in the 1980s were listed on the US EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), a federal inventory of actual or potential contaminated properties. By placing the sites on CERCLIS, this made them subject to investigation and remediation under Federal Superfund Legislation (CERCLA and SARA (Superfund Amendments and Reauthorization Act)), as well as state regulations. During the 1980s and early 1990s, the EPA and DEM Site Assessment Programs completed an initial site assessment of the majority of these sites, providing limited information and environmental data. However, additional investigation has been forestalled due to limitations on funding and staff at the state and federal levels. As a result, the full extent of contamination and environmental impacts at many of these sites remains unknown.

In an effort to understand the impacts associated with these sites, the U.S. Environmental Protection Agency has recently set a deadline to address all CERCLA sites nationwide under the Federal Superfund Assessment process by the year 2005. In response, the Department has taken the initiative and developed the Landfill Closure Program (LCP) in an effort to by-pass the Federal Superfund Process and streamline the investigation, remediation and closure of these

¹ Other terms that are typically used to describe landfills: Solid Waste Management Facility, Refuse Disposal Facility, Sanitary Landfill, Dump, or any other location at which solid waste was disposed.

inactive landfills. This alternative is both cost effective and much less time consuming when compared to the traditional Superfund process.

Under the Landfill Closure Program the Responsible Parties will be responsible for coordinating, contracting and funding (assistance may be available) the investigations and closure or remedial action plans under the guidance and oversight of Department personnel. This allows the Office of Waste Management to focus its resources on accelerating the review and approval process. The regulatory authority and oversight of the Site Remediation Program, Waste Facility Management Program, and CERCLA Site Assessment Program will be combined and coordinated, providing a simultaneous review of the assessment, remediation, and closure of these sites under all applicable state Solid Waste and hazardous Site Remediation Regulations. Parties that enter into the LCP may also be able to work toward beneficially reusing the property (dependent upon actual site conditions) for public works garages, transfer stations, cell phone towers, recreational activities, and/or other appropriate uses.

3.0 Purpose

This policy, which is the first step in the implementation of the LCP, is being established to clarify the applicability of current regulations and as an acknowledgement that improper closure or abandonment of solid waste landfills may pose a threat to human health or the environment through actual or potential releases of hazardous materials to soil, sediments, groundwater, surface water or air. Older landfills may pose an increased risk because there were no restrictions on the types of wastes accepted, resulting in the possible disposal of hazardous materials, hazardous wastes, liquid wastes and industrial wastes into many of these landfills. Coupled with a lack of requirements for liners and run-on/runoff controls, groundwater and surface water resources may be compromised. These factors formed the rationale in the 1980's and early 1990's of placing all the known landfills in Rhode Island on the EPA CERCLIS list of hazardous waste sites.

The objectives of this Policy are:

1. To address actual or potential human health and environmental risks which may have resulted from abandonment or incomplete closure of landfills.
2. To satisfy all applicable state and federal regulations regarding solid waste facilities and remediation of contaminated sites in a single coordinated review process, potentially resulting in a Letter of Compliance from the Rhode Island Department of Environmental Management (the Department or DEM), a letter of No Further Action from the US Environmental Protection Agency (EPA) and archival from CERCLIS, based on the 1997 Superfund Memorandum of Agreement (SMOA)² between the EPA and DEM.

² Section V (EPA Region I's Commitments and Reservation of Rights), Part B of the "Superfund Memorandum of Agreement Between the Rhode Island Department of Environmental Management and the U.S. Environmental Protection Agency, Region I", dated February 1997.

3. To facilitate potential limited reuse of the landfill property once adequate investigation, risk assessment and, if necessary, remediation have been completed at the site. The allowable types of reuse would be stipulated on a land usage restriction recorded in the municipal land evidence record of the property.

4.0 Authority

This policy is applicable to those landfills that ceased operation prior to April 1992³. The operation and closure of these sites was governed by three earlier versions of the Solid Waste Regulations that were promulgated in 1969, 1975 and 1982⁴. Both the 1975 and 1982 Solid Waste Regulations provided for the issuance of a Certificate of Closure upon the Department's determination that closure of the landfill had been satisfactorily completed. Without a Certificate of Closure, the landfill is deemed to be operating and must comply with all current statutes and regulations. Therefore, the Department has authority to enforce the landfill closure requirements of the current Solid Waste Regulations, which reflect the most current and best available solid waste landfill closure standards to address potential threats to human health and the environment.

Where a release or potential for release of hazardous materials has been observed or documented, the site also becomes jurisdictional under the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations), as amended August 1996.

³ Authority is found in the following:

Rhode Island General Laws Chapter 23-8.9 (Refuse Disposal), Chapter 46-12 (Water Pollution), Chapter 46-13.1 (Groundwater), Chapter 23-19.1 (Hazardous Waste), Chapter 2-1-22 (Wetlands), Chapter 23-23 (Air), and Section 42-17.1-2 (Powers and Duties of the Director), and

Rules and Regulations for Composting Facilities and Solid Waste Management Facilities (Solid Waste Regulations), dated January 1997 and Solid Waste Regulation No. 2, Solid Waste Landfills, dated January 1997, both promulgated by the Rhode Department of Environmental Management (as is or as amended).

Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations), amended August 1996, promulgated by the Rhode Island Department of Environmental Management, Office of Waste Management.

Rules and Regulations for Groundwater Quality, amended August 1996, promulgated by the Rhode Island Department of Environmental Management, Office of Water Resources.

⁴ 1969 Solid Waste Regulations: Rules and Regulations Establishing Minimum Standards for Permissible Types of Refuse Disposal Facilities, dated January 10, 1969 and promulgated by RI Department of Health.

1975 Solid Waste Regulations: Rules and Regulations for Operating Solid Waste Management Facilities, dated March 16, 1975 and promulgated by the RI Department of Health; and the Rules and Regulations for Licensing Solid Waste Management Facilities, dated December 11, 1975 and promulgated by the RI Department of Health.

1982 Solid Waste Regulations: Rules and Regulations for Solid Waste Management Facilities, dated December 1, 1982 and promulgated by the RI Department of Environmental Management, Division of Air and Hazardous Materials.

For the purposes of the Landfill Closure Program, the requirements of the Remediation Regulations and the Solid Waste Regulations are combined to provide a more streamlined regulatory approach to the assessment, remediation and closure of these landfills. At the completion of the required remedy and closure of the landfill through this Program, the site will have achieved compliance with both the Remediation Regulations and the Solid Waste Regulations. In addition, those sites listed in the Federal CERCLA Program may be eligible to receive a No Further Action letter from EPA and be archived from CERCLIS once the Program objectives have been met.

5.0 Implementation of the Landfill Closure Program

The initial phase of the LCP will address municipally owned or operated landfills. The Department shall contact municipalities and/or current owners of the sites to encourage voluntary participation in the Program by promoting the reduction of human health and environmental risks, decreased liability and potential beneficial reuse. Owners and operators of non-municipal landfills may also approach the Department for inclusion of their site(s) in the LCP.

Once a municipality or other responsible party decides to volunteer under the Landfill Closure Program, an environmental consultant should be hired to develop a Site Investigation Work Plan (SIWP). Upon Department approval of the SIWP, the responsible party and the Department will enter into a Memorandum of Agreement. This Agreement allows the Department to notify the U.S. Environmental Protection Agency that the site is being investigated through the State Program rather than under the Federal Superfund Assessment process. Once the Memorandum of Agreement is signed, the investigation of the landfill may commence.

The investigation of each landfill must adequately assess the nature and extent of contamination at the site and evaluate possible remedial alternatives for the site in accordance with Section 7.00 (Site Investigation) of the Remediation Regulations and Rule 2.1.09 (Closure and Post-Closure Plans and Financial Assurance) of the Solid Waste Regulations. The preferred remedy for the landfill shall satisfy Sections 9.00 and 11.00 (Remedial Action Work Plan and Remedial Action) of the Remediation Regulations and Rule 2.1.09 (Closure and Post-Closure Plans and Financial Assurance) of the Solid Waste Regulations. As some of the requirements of Rule 2.1.09 of the Solid Waste Regulations may not be applicable to all of these inactive landfills, the Department may grant a variance from one or more of these requirements, as long as all documentation and information necessary to support the variance has been provided. Upon completion of the remedy and closure of the landfill, a professional engineer registered in the State of Rhode Island must certify that the landfill has been properly remediated and closed in accordance with the approved Remedial Action Work Plan and/or Closure Plan. Upon receipt of this certification, the Office of Waste Management will issue either a Letter of Compliance or Interim Letter of Compliance to the landfill owner recognizing satisfactory completion of the remedy and closure. A Letter of Compliance will be issued if there are no groundwater objective exceedances in accordance with the Remediation Regulations, whereas, an Interim Letter of Compliance will be issued if groundwater objective exceedances exist at the site. In either case, post-closure monitoring of the landfill shall be required in accordance with the Solid Waste Regulations.

Once the CERCLIS-listed sites have achieved compliance with the State Solid Waste and Remediation Regulations, an additional step is required to archive them from CERCLIS. The 1997 Superfund Memorandum of Agreement between the RIDEM Office of Waste Management and USEPA Region I allow all properties that have been satisfactorily investigated and remediated in accordance with RIDEM's Remediation Regulations to be archived from CERCLIS. Upon RIDEM approval of a Remedial Action Work Plan and/or Closure Plan RIDEM may request that EPA change the CERCLIS site status to be "subject of voluntary remediation pursuant to the Remediation Regulations". Following issuance of a Letter of Compliance or Interim Letter of Compliance, the Office of Waste Management may request that EPA archive the site, removing it from the list of active CERCLIS sites. (Please refer to the following Case Studies for additional details.)

6.0 Case Studies

The following case studies provide examples of when a landfill may be eligible to be archived from CERCLIS. Please note that a determination will be made on a site-specific basis and the following case studies are only meant for guidance purposes.

Case Study #1

A landfill is properly closed/remediated in accordance with the Remediation Regulations and Solid Waste Regulations and there are no groundwater objective exceedances of the Remediation Regulations.

The responsible party would receive a Letter of Compliance from the Office of Waste Management and would be eligible for a No Further Action Letter from EPA, archiving the site from CERCLIS. The responsible party would be required to perform post-closure monitoring in accordance with the Solid Waste Regulations.

Case Study #2

A landfill is properly closed/remediated in accordance with the Remediation Regulations and Solid Waste Regulations and groundwater objective exceedances exist at the site.

Since groundwater objective exceedances exist, monitoring would be required as part of the remedy. As a result, the responsible party would receive an Interim Letter of Compliance from the Department and be eligible for a Comfort Letter from EPA. A Comfort Letter clarifies EPA's intentions concerning potential listing of the site on the National Priorities List (NPL). Comfort Letters typically include language that states, "sufficient information is available to support a decision not to pursue NPL listing of the site" and "no further steps will be taken to list this site on the NPL". Once contaminant levels are below the groundwater objectives, the Department would issue a Letter of Compliance and the site would be eligible for a No Further Action letter from EPA. The responsible party would still be required to perform post-closure monitoring in accordance with the Solid Waste Regulations.

Landfill Closure Program Frequently Asked Questions (FAQs)

1. What are some of the risks that could be associated with inactive or abandoned municipal solid waste landfills?

Older landfills pose an increased risk because there were no restrictions on the types of wastes accepted, resulting in the possible disposal of hazardous materials, hazardous waste, liquid wastes and industrial wastes into many of these landfills. Coupled with a lack of requirements for liners and run-on/run-off controls, groundwater and surface water resources may be compromised. In addition, elevated levels of landfill gas and contaminated soils and sediments may pose a threat to human health or the environment. Lastly, physical hazards are typically observed at many of these landfills.

2. What are the municipality's most significant liabilities for its landfill?

The U.S. Environmental Protection Agency (EPA) has set a deadline for the year 2005 to address all CERCLA sites under the Federal Superfund process. As the EPA assesses the sites within its inventory, it will determine whether any of the sites will be nominated for the National Priorities List (NPL). If a site is listed on the NPL, it becomes a Superfund site, and must be investigated and remediated/closed in accordance with Superfund requirements. Typically, this is a very long and expensive process, and under this process all former and current owners and operators are potentially responsible parties.

3. What is the Landfill Closure Program?

The Department has developed the Landfill Closure Program to address the inactive and abandoned solid waste landfills located throughout Rhode Island that are not currently being evaluated by EPA or by other programs within the Office of Waste Management. The Landfill Closure Program is a proactive program that encourages municipalities to volunteer in order to address any unknown contamination, potential or actual human health risks, and environmental impacts at inactive or abandoned landfills. The ultimate goal of the Landfill Closure Program is to work with municipalities to minimize any environmental risks associated with these landfills and to streamline the processes involved with the investigation and closure of municipal landfills.

4. What are the objectives of the Landfill Closure Program?

The objectives of this Program are:

- To address actual or potential human health and environmental risks which may have resulted from abandonment or incomplete closure of landfills.
- To satisfy all applicable State and Federal regulations regarding solid waste facilities and remediation of contaminated sites in a single coordinated review process.
- To facilitate potential limited reuse of the landfill property, once adequate investigation, risk assessment, and remediation have been completed at the site.

5. *What landfills fall into the Landfill Closure Programs universe?*

Inactive or abandoned solid waste landfills that ceased operation (stopped accepting waste) prior to April 1992, and which have not received a final Certificate of Closure from the Department of Environmental Management.

6. *What are the benefits for a municipality to volunteer under the Landfill Closure Program?*

By volunteering under the Landfill Closure Program, the municipality is given the opportunity to investigate and remediate the site through an expedited and streamlined process. Once a municipality completes the Landfill Closure Program process, the landfill will be closed in accordance with Department Regulations and will be eligible to be archived (removed) from CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System). In addition, properties may be able to be utilized as transfer stations, public works facilities, cell phone towers, open space, parks, for recreational activities or commercial properties. Lastly, the municipality may be eligible for monies to investigate the landfill and implement remediation.

7. *What would be required of my municipality if we choose to volunteer?*

Once a municipality decides to volunteer under the Landfill Closure Program the Department should be notified in writing of the municipality's intentions. Typically, the next step would involve an environmental consultant to be hired by the municipality to develop a Draft Site Investigation Work Plan (SIWP). Once the SIWP is finalized,

the municipality and the Department would enter into a Memorandum of Agreement. This Agreement describes the investigatory activities that will be conducted at the landfill and "spells out" the expectations of each of the parties. In addition, the Agreement will allow the Department to notify EPA that the site is being investigated through the State program rather than under the Federal Superfund process. Municipalities should be aware that if investigatory activities are not completed, the site's "State-lead" designation will be removed and the site will continue through the Superfund Assessment process. Once the Agreement is signed the municipality's consultant would implement the SIWP activities with Department oversight. Upon completion of the Site investigation, the consultant on behalf of the municipality shall submit a Site Investigation Report (SIR). The SIR would include three remedial alternatives and indicate the preferred remedial alternative.

8. *Is there any funding available for investigating or remediating a landfill?*

Yes, low interest loans, grants and landfill site assessment monies are available for conducting investigation activities. In addition some of the funding mechanisms may also be able to be utilized in the implementation of the preferred remedial alternative. A summary list of Potential Municipal Funding Mechanisms is available.

9. *Have other Municipalities considered the Landfill Closure Program?*

Yes, two municipalities are currently participating in this program and several other municipalities have shown interest.

**Rhode Island Department of Environmental Management
Office of Waste Management – Landfill Closure Program
Summary of Potential Municipal Funding Mechanisms**

Clean Water State Revolving Fund

Co-managed by the RI Department of Environmental Management and the RI Clean Water Finance Agency, the Clean Water State Revolving Fund (CWSRF) provides below market rate interest loans to municipalities and other local governmental units for various water pollution abatement/water quality protection projects including landfill closures. The interest rate subsidy with CWSRF loans is at least one third off the community's market borrowing rate. The borrower's water pollution abatement/ water quality protection project must appear on RIDEM's annual Project Priority List as a prerequisite for CWSRF funding. For more information about the CWSRF program please contact Jay Manning of RIDEM's Office of Water Resources at (401) 222-4700 extension 7254 or the RI Clean Water Finance Agency at (401) 453-4430.

Nonpoint Source (NPS) Pollution Abatement and Wellhead Protection Grants

The primary objective of the NPS project is to reduce NPS pollutant loadings entering water resources so that beneficial uses of the water resources are maintained and restored. The grants, provided on a matching basis, will give financial assistance for projects that prevent, control or abate water pollution caused by nonpoint sources (NPS) or protect groundwater quality in wellhead protection areas. For more information please contact Jim Riordon of RIDEM's Office of Water Resources at (401) 222-4700 extension 4421.

Brownfields Targeted Site Assessment Program

EPA offers assistance in the form of a Brownfields Targeted Site Assessment to public or non-profit entities (e.g., municipalities or community development corporations) who currently have redevelopment plans for contaminated property. The purpose of a Brownfields Targeted Site Assessment is to minimize the uncertainties surrounding the actual or perceived contamination associated with a site. A Brownfields Targeted Site Assessment may encompass one or more of the following activities:

- A screening assessment, including a background and historical investigation and site inspection;
- A full site assessment, including sampling activities to identify the types and concentrations of contaminants and the areas of contamination that must be cleaned up; and
- The establishment of cleanup options and cost estimates based on future uses and redevelopment plans.

For more information please contact Kelly Owens of RIDEM's Office of Waste Management at (401) 222-4700 extension 7108.

Landfill Site Assessment Monies

A limited amount of funding may be available for landfill site assessments. In order for a municipality to be eligible to receive Landfill Site Assessment Monies a percentage, which has not yet been determined, of matched municipal monies must be provided by the City/Town. In addition, the municipality must utilize one of the consultants in RIDEM's Technical Assistance Contract. Assistance will be offered and awarded to projects based on ranking of the environmental benefits of the project, readiness to proceed and availability of funds. For more information please contact [Laurie Grandchamp](#) of RIDEM's Office of Waste Management at (401) 222-4700 extension 7143.